



# FOOD LAB

Quality control systems for food and beverage



## CDR FoodLab Junior for Milk Urea Nitrogen (MUN)

CDR FoodLab Junior can be used to determine the amount of **Milk Urea Nitrogen (MUN)** in milk. Thanks to its compact dimensions, lightness and the different ways of connections, it can be used **to perform tests on-site**: in fact, it is possible to measure the content of urea in raw milk drawn from cows in order to determine an appropriate diet for milk animals and improve their health.

### System

The analytical system includes:



- A **thermostated analyser** based on photometric technology that uses LEDs instead of usual tungsten lamps. The **photometric module** is a 37°C thermostated block with 1 reading cell and 3 incubation cells.
- A **Kit of pre-vialled, disposable reagents** with a low toxicity developed by the research laboratories of CDR and a 12-month shelf-life.
- **Pipettes** to simplify the collection of the samples.
- **"Step by step" built-in guide** during the analysis procedure.
- **Possibility to connect a printer.**

*CDR FoodLab Junior for Milk Urea Nitrogen in milk is supplied with a 3 year warranty.*

**Foodlab Junior can also test these parameters in Milk, and will be customised to suit your testing needs.**

### Determination of Lactose in milk

**FoodLab Touch Junior** allows to make lactose test in milk at production line, without skilled staff and in accordance with the **reference method** (Fehling), a volumetric method that instead requires training, special skills and so much time at disposal. With a **simple analytical kit**, **10 minutes** of time and **few steps** you can obtain reliable and accurate results.

**Processing – Sample volume – Measuring range**

## Sample

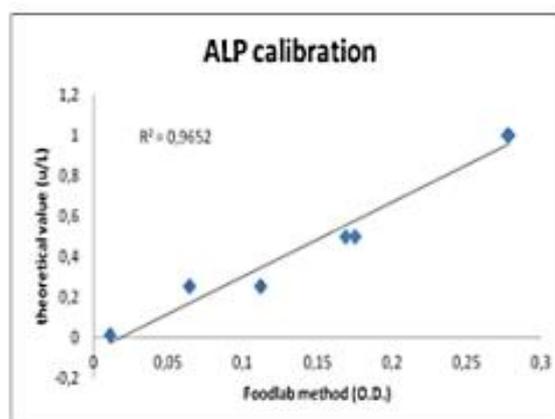
Milk: Dilute 1 part of milk + 10 parts of water. E.g. take 100 µL of milk and add it to 1mL of distilled water  
 Mozzarella: weight 10 grams of mozzarella and add 100 mL of distilled water. Mix in a Stomacher for about 3 minutes. Take the filtered solution to test

Measuring range (% lactose)	Sample volume	Resolution (% lactose)	Accuracy	Repeatability
0.1 - 5.5	5 µL diluted	0.01	+/- 5%	CV<3%

## Alkaline phosphatase (ALP) in milk

The alkaline phosphatase (ALP) is an enzyme normally present in raw milk and it is inactivated in conditions of heat treatment. The temperature of inactivation of ALP is slightly higher than that required for the destruction of pathogenic bacteria. So the ALP test in pasteurized milk is used to verify if the heating process of pasteurization is done correctly.

% raw milk	Theoretical value (U/L)	Foodlab method (O.D.)	Theoretical value (U/L)
Pasteurized milk only	0,01	0,011	0,01
0,05% of crude milk	0,25	0,064	0,25
0,1% of crude milk	0,5	0,112	0,25
0,1% of crude milk	0,5	0,169	0,5
0,1% of crude milk	0,5	0,175	0,5
0,2% of crude milk	1	0,278	1
0,2% of crude milk	1	0,277	1



## Sample

Use pasteurized cow milk.

Measuring range (U/L alk phos)	Sample volume	Resolution (U/L Alk phos)	Accuracy	Repeatability
1 - 5	150 µL	0,1	+/- 5%	CV<3%

For samples with a value of ALP >5 U/L use half of the sample volume and multiply the result by 2.

## Test principle



Alkaline phosphatase induces the hydrolysis of p-nitrophenyl phosphate in an alkaline solution, and forms a yellow colored complex whose intensity, measured at 405 nm, is directly proportional to the concentration of ALP in the sample.

The calibration curve was performed using various additions of raw milk in pasteurized milk. The values reported are correlated with those reported in the literature ("ALP testing for milk Pasteurization" Cornell University - Dairy science facts 1998).